

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

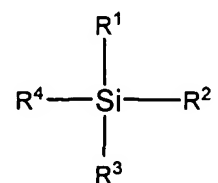
Claims 1-14 (canceled)

15. (New) A curable sealant composition comprising the reaction product of:
- a) a polymer comprising conjugated diene monomer units in a backbone of said polymer, and
 - b) a silicon containing functional group, wherein said functional group forms a terminal group on said polymer and further wherein the polymer has a 1,2-microstructure content of about 40-70%, a weight average molecular weight (M_w) of about 10,000-60,000 and a polydispersity of less than about 1.8.
16. (New) The composition of claim 15 wherein said conjugated diene contributed monomer units are selected from the group consisting of 1,3-butadiene, isoprene, 1,3-pentadiene, 2,3-dimethyl-1,3-butadiene, 1,3-hexadiene, 2-methyl-1,3-pentadiene, 3,4-dimethyl-1,3-hexadiene, 4,5-diethyl-1,3-octadiene, 3-butyl-1,3-octadiene, phenyl-1,3-butadiene, and mixtures thereof.
17. (New) The composition of claim 15, wherein the polymer backbone further includes additional monomer units selected from the group consisting of vinyl aromatic hydrocarbon monomers, ethylene oxide, propylene oxide, styrene oxide, ethylene sulfide, propylene sulfide, styrene sulfide, acetaldehyde, propionaldehyde, isobutyraldehyde, n-caproaldehyde, acetthioaldehyde, propionthioaldehyde, isbutyrthioaldehyde, n-caprothioaldehyde, 3-dimethyl-oxycyclobutane, 3-diethyloxycyclobutane, 3-methylethyl-oxycyclobutane, 3-dimethylthiocyclobutane, 3-diethyl-thiocyclobutane, 3-methylethylthiocyclobutane, methylethyl thioketone, methyl isopropyl thioketone and diethyl thioketone, heterocyclic nitrogen containing monomers, and mixtures thereof.

18. (New) The composition of claim 15 wherein said polymer backbone further includes at least one initiator residue.

19. (New) The composition of claim 18 wherein said initiator residue is derived from a multi-functional initiator.

20. (New) The composition of claim 15 wherein said terminal groups are the reaction product of the polymer backbone with a terminating group of the general structure:



wherein R^1 , R^2 , R^3 , and R^4 are independently selected from the group consisting of hydrocarbon, alkoxy groups, and mixtures thereof and wherein at least one of R^1 , R^2 , R^3 , and R^4 comprises an alkoxy group.

21. (New) The composition of claim 20 wherein said alkoxy group(s) are selected from the group consisting of methoxy, ethoxy, propoxy, butoxy, pentoxy, and alkoxy groups with up to about 10 carbons, and mixtures thereof.

22. (New) The composition of claim 20 wherein said hydrocarbon group(s) are selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl-, hexyl-, heptyl-, octyl, nonyl-, decyl-, and mixtures thereof.

23. (New) The composition of claim 15, further comprising one or more randomizing modifiers to control the 1,2-microstructure content of the composition.

24. (New) The composition of claim 23, wherein the one or more randomizing modifiers is selected from the group consisting of hexamethylphosphoric acid triamide, N,N,N',N'-tetramethylethylene diamine, ethylene glycol dimethyl ether, diethylene glycol dimethyl ether, triethylene glycol dimethyl ether, tetraethylene

glycol dimethyl ether, tetrahydrofuran, 1,4-diazabicyclo octane, diethyl ether, triethylamine, tri-n-butylamine, tri-n-butylphosphine, p-dioxane, 1,2-dimethoxy ethane, dimethyl ether, methyl ethyl ether, di-n-propyl ether, di-n-octyl ether, anisole, dibenzyl ether, dimethyl aniline, N-ethylpiperidine, N-methyl-N-ethyl aniline, N-methylmorpholine tetramethylenediamine, oligomeric oxolanyl propanes (OOPS), 2,2-bis-(4-methyl dioxane), bistetrahydrofuryl propane and mixtures thereof.

25. (New) The composition of claim 15, wherein the weight average molecular weight or (M_w) is between 10,000 and 35,000.

26. (New) The composition of claim 15, further comprising one or more additional sealant ingredients selected from the group consisting of plasticizers, fillers, reinforcing agents, modifiers, curing catalysts/hardeners, stabilizers, and mixtures thereof.

27. (New) The composition of claim 15, wherein said sealant is curable upon exposure to moisture.

28. (New) A process for forming a curable sealant comprising:

a) forming a polymer having a 1,2-microstructure content of about 40-70%, a weight average molecular weight (M_w) of about 10,000-60,000, and a polydispersity of less than 1.8 by

i) initiating a living polymerization of conjugated diene monomers with a multi-functional initiator present in an amount of about 0.001 to 0.1 moles per 100 grams conjugated diene monomer, and

ii) terminating said polymerization with a tetra-substituted silicon, and

c) combining the polymer with one or more sealant ingredients selected from the group consisting of plasticizers, fillers, reinforcing agents, modifiers, curing catalysts/hardeners, stabilizers, and mixtures thereof.

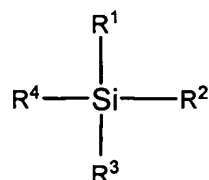
29. (New) The process of claim 28 wherein said conjugated diene monomers are selected from the group consisting of 1,3-butadiene, isoprene, 1,3-pentadiene, 1,3-butadiene, isoprene, 1,3-pentadiene, 2,3-dimethyl-1,3-butadiene, 1,3-hexadiene, 2-

methyl-1,3-pentadiene, 3,4-dimethyl-1,3-hexadiene 4,5-diethyl-1,3-octadiene, 3-butyl-1,3-octadiene, phenyl-1,3-butadiene, and mixtures thereof.

30. (New) The process of claim 28 wherein said living polymerization includes additional monomer units.

31. (New) The process of claim 30 wherein said additional monomer units are selected from the group consisting of vinyl aromatic hydrocarbon monomers, ethylene oxide, propylene oxide, styrene oxide, ethylene sulfide, propylene sulfide, styrene sulfide, acetaldehyde, propionaldehyde, isobutyraldehyde, n-caproaldehyde, acetthioaldehyde, propionthioaldehyde, isbutyrthioaldehyde, n-caprothioaldehyde, 3-dimethyl-oxycyclobutane, 3-diethyloxycyclobutane, 3-methylethyl-oxycyclobutane, 3-dimethylthiocyclobutane, 3-diethyl-thiocyclobutane, 3-methylethylthiocyclobutane, methylethylthioketone, methyl isopropyl thioketone and diethyl thioketone, heterocyclic nitrogen containing monomers, and mixtures thereof.

32. (New) The process of claim 28 wherein said tetra-substituted silicon group is of a general structure:



wherein R¹, R², R³, and R⁴ are independently selected from the group consisting of hydrocarbon, alkoxy groups, and mixtures thereof and wherein at least one of R¹, R², R³, and R⁴ comprises an alkoxy group.

33. (New) The process of claim 32 wherein said alkoxy groups are selected from the group consisting of methoxy, ethoxy, propoxy, butoxy, pentoxy, and alkoxy groups with up to about 10 carbons, and mixtures thereof.

34. (New) The process of claim 32 wherein said hydrocarbon groups are selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl-, hexyl-, heptyl-, octyl, nonyl-, decyl-, and mixtures thereof.

35. (New) The process of claim 28, wherein the polymer has a weight average molecular weight of about 10,000-35,000.

36. (New) A curable sealant composition comprising the reaction product of:

a) a polymer comprising conjugated diene monomer units in a backbone of said polymer, and

b. at least one functional group including silicon and an alkoxy group, wherein said functional group forms a terminal group on said polymer and further wherein the polymer has a 1,2-microstructure content of about 40-70%, a weight average molecular weight (M_w) of about 10,000-60,000 and a polydispersity of less than about 1.8.

37. (New) A curable sealant composition comprising:

a) a polymer including at least conjugated diene contributed monomer units in a backbone of said polymer, and

b. terminal groups including silicon, wherein the polymer has a 1,2-microstructure content of about 40-70%, a weight average molecular weight (M_w) of about 10,000-60,000 and a polydispersity of less than about 1.8.